

**REMARKS**

The Office Action objected to claims 3, 7, 13, 17, 20, 23, 24, 27, 33, 37, 59, and 60 on formal grounds. In response, Applicant has amended claim 1 in the manner kindly suggested by the Examiner merely to clarify the invention. All of the amendments are fully supported by the specification, claims, and figures as originally filed. No new matter is believed or intended to be involved. Favorable consideration is respectfully requested.

Claim 1 has been amended for the purpose of clarification. The skilled person in the art would know from common knowledge and from the description of the present invention that the carbonate monomer would act as a branching monomer. Moreover it is clear to the skilled person that a carbonate monomer may be one of the at least two different monomers forming the backbone of the polymer. Hence the amendment of claim 1 has introduced no new subject matter but serves only to clarify the meaning.

Claim 54 has been amended to change the spelling of “flavouring.”

**Rejection under 35 U.S.C. § 112**

Claims 17, 20, 58, 59, 61, and 62 have been amended merely to clarify the invention. All of the amendments are fully supported by the specification, claims, and figures as originally filed. No new matter is believed or intended to be involved.

**Rejection under 35 U.S.C. § 102**

The Examiner rejected claims 1-16, 23-27, 30-42, 44-50, 55, and 57-64 under 35 U.S.C. 102(b) as being anticipated by GOLDBERG (WO 01/47368, pages 4-7, 9-15, 17, 19, 42). The Examiner contends that GOLDBERG discloses a chewing gum free of non-biodegradable polymers, including two different biodegradable polyester copolymers. This contention is respectfully traversed.

As a initial matter, in order for a § 102 rejection to be valid, the art cited must teach all the elements of the rejected claims.

Currently amended claim 1 requires a polymer polymerized from at least one trifunctional or higher functional initiator, and at least two different monomers forming the backbone of the polymer, at least one of said monomers is a branching monomer selected from the group consisting of carbonate monomers.

GOLDBERG discloses a chewing gum comprising a degradable copolymer obtained by polymerization of two different monomers, one first monomer, which is polymerizable by condensation polymerization, and one monomer with a function to suppress the crystallinity of the copolymer. GOLDBERG contemplates multiple lists of ingredients for both monomers. However, claim 1 is patentably distinguishable because there is no indication in GOLDBERG that a trifunctional or higher functional initiator must be used with at least two different monomers forming the backbone of the polymer, one of which is a carbonate monomer.

An object of the invention is to provide a chewing gum polymer with properties comparable to those of conventional chewing gum elastomers both in respect to the polymer itself, and the interaction with the chewing gum ingredients when incorporating a chewing gum formulation.

GOLDBERG describes a degradable polymer for use as a gum base. However, the elastomeric properties of the degradable polymer in GOLDBERG differ from those of conventional chewing gum. This is shown by the requirement to mix it with conventional chewing gum polymers, as illustrated by the fact that the examples of GOLDBERG only disclose partially biodegradable chewing gum. Because of the requirement to mix with conventional polymers it appears that the degradable polymers of GOLDBERG do not have elastomeric properties suitable for chewing gum.

In contrast, the polymers according to amended claim 1 have elastomeric properties which are very suitable for chewing gum. In fact, according to an embodiment of the invention (claim 44), it is possible to manufacture a satisfying chewing gum substantially free of conventional chewing gum polymers when using the polymer according to amended claim 1. The description highlights these advantages in paragraphs [0013]-[0016].

[0013] According to the invention, the obtained polymer has elastomeric properties suitable for chewing gum.

[0014] According to the invention, a polymer structure being very suitable as chewing polymer/elastomer has been obtained.

[0015] According to the invention it has been realized that a certain degree of branching of the backbone is needed to obtain a final improved performance, when the polymer, preferably the elastomer, is incorporated in a chewing gum. It has moreover been realized that the obtained branching needs to be carefully controlled in order to avoid too much branching-induced crosslinking.

[0016] According to the invention, it has surprisingly been realized that this balance between branching/cross-linking may be controlled by a suitable pairing of initiator and carbonate monomer. Such pairing includes among the most significant "control knobs" the mutual concentration of the initiator versus the carbonate monomer.

The person of ordinary skill in the art would find no hints in GOLDBERG that a polymer polymerized according to amended claim 1 would result in a branched structure of the polymer, and that this branched polymer would be suitable for use in chewing gum due to its advantageous elastomeric properties.

Consequently, for at least the reasons above, GOLDBERG does not anticipate any of the of the amended claims, nor does it make obvious any of the claims in combination with any of the references cited by the Examiner. Reconsideration and allowance of all pending claims is respectfully requested.

### **Rejection under 35 U.S.C. § 103**

The Examiner rejected claims 17-20, 28, and 29 under 35 U.S.C. 103(a) as being anticipated by GOLDBERG. The Examiner contends that finding the optimum amount of each component would require nothing more than routine experimentation by one reasonably skilled in this art. The Applicants respectfully traverse this rejection.

GOLDBERG discloses a chewing gum comprising a degradable copolymer obtained by polymerization of two different monomers, one first monomer, which is polymerizable by condensation polymerization, and one monomer with a function to suppress the crystallinity of the copolymer. GOLDBERG primarily focuses on the amounts of monomers which may be

used in condensation polymerization and to suppress crystallinity to form a polymer for use with a non-biodegradable polymer to form a gum base. While GOLDBERG does contemplate amounts of monomer and comonomers for a polymer, the monomer and comonomers are not the same ones, and they are optimized for a different use. Consequently, GOLDBERG does not teach the amounts of the particular monomers of the pending claims 17-20, 28, and 29. Reconsideration and allowance of claims 17-20, 28, and 29 is respectfully requested.

The Examiner rejected claim 43 under 35 U.S.C. 103(a) as being anticipated by GOLDBERG in view of LI (6,153,231, col. 7, lines 60-61). The Examiner contends that it would have been obvious to include a pharmaceutical agent in the chewing gum of GOLDBERG since it is conventional to include such an active ingredient in chewing gum, as evidenced by LI. The Applicants respectfully traverse this rejection.

The addition of active ingredients to a gum can dramatically alter the textural properties of that gum, as these ingredients may be, for instance, acidic, basic, a salt, hydrophobic, hydrophilic, or hydrated. Hence, unless the gum bases are identical, there is no way to predict whether or not a chewing gum with added active ingredients will have the desired textural properties for the consumer. Thus, one skilled in the art would understand that there is no teaching, suggestion or motivation in GOLDBERG for the addition of other substances (besides flavorants) to the chewing gum. GOLDBERG is directed to and discloses a chewing gum comprising both biodegradable and non-biodegradable polymers, the use of flavorants for such a gum, and how one skilled in the art may vary the monomers which comprise the chewing gum to achieve the desired textural properties of the gum. Reconsideration and allowance of claim 43 is respectfully requested.

The Examiner rejected claims 51-54 and 56 under 35 U.S.C. 103(a) as being anticipated by GOLDBERG in view of MEYERS (5,433,960, cols. 3 & 9-13, and claims 1, 16, 27). The Examiner contends that it would have been obvious to coat the chewing gum in GOLDBERG with a coating as claimed by applicant in order to provide storage stability to the chewing gum since it is well known to coat chewing gum products with each of applicant's claimed coating materials in order to achieve this object, as advanced by MEYERS. The Applicants respectfully traverse this rejection.

The use of different polymers, especially one that is biodegradable in a chewing gum can change the requirements for a coating to protect the chewing gum. Thus there is no teaching or suggestion in MEYER for a coating that can protect the type of chewing gum in GOLDBERG, let alone one with the specific monomers suggested in the pending claims. Reconsideration and allowance of claims 51-64 and 56 is respectfully requested.

The obviousness arguments in the Office Action are also not sufficient because the Examiner has not suggested any reason to modify either GOLDBER, MEYER, or LI. The MPEP states, "Obviousness can be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so." MPEP § 2143.01(I). A mere statement that the claimed invention is within the capabilities of one of ordinary skill in the art is not sufficient by itself to establish *prima facie* obviousness. MPEP § 2143.01(IV). "Rejections on obviousness cannot be sustained by mere conclusory statements; instead there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." MPEP § 2143.01(IV) citing *KSR*.

### **Double Patenting Rejection**

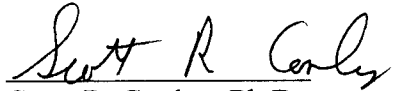
The Examiner has provisionally rejected claims 1-64 on the grounds of non-statutory obviousness-type double patenting as being un-patentable over claims 1-62 of co-pending Application No. 10/472,122; claims 1-54 of co-pending Application No. 10/472,154; claims 1-67 of co-pending Application No. 10/528,926; claims 1-7 and 10-57 of co-pending Application No. 10/528,927; claims 1-20, 22-26, and 28-42 of co-pending Application No. 10/529,133; claims 1-55 of co-pending Application No. 10/529,137; and claims 1, 2, 10, 11, 13-18, 24-26, and 28-54 of co-pending Application No. 11/088,109; each set of claims being in view of GOLDBERG.

Upon indication of allowable subject matter in this case, Applicants will file the appropriate terminal disclaimers in order to overcome these rejections.

Based on the foregoing, all pending claims are in a condition for allowance. Accordingly, Applicant respectfully requests reconsideration and an early notice of allowance. Should the

Examiner wish to discuss the amendments or arguments made herein, Applicant invites the Examiner to contact the undersigned at (513)651-6818 or via e-mail at [srconley@fbtlaw.com](mailto:srconley@fbtlaw.com).

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